

CLAIMS

1. A detection method of detecting acquisition of the drug resistance of a test cancer cell to anticancer drugs, which comprises detecting amplification of one or more types of genes selected from ABC transporter genes and BCL2 family genes consisting of ABCA3 gene, ABCB6 gene, ABCB8 gene, ABCB10 gene, ABCC4 gene, ABCC9 gene, ABCD3 gene, ABCD4 gene, ABCE1 gene, ABCF2 gene, BCL2L2, BCL2L10, BCL2L1, and BCL2A1, in said test cancer cell.
2. The detection method according to claim 1, wherein amplification of the ABCA3 gene is an index of acquisition of drug resistance to etoposides, amplification of the ABCB6 gene is an index of acquisition of drug resistance to camptothecins, amplification of the ABCB8 gene is an index of acquisition of drug resistance to cisplatin, amplification of the ABCB10 gene is an index of acquisition of drug resistance to camptothecins, amplification of the ABCC4 gene is an index of acquisition of drug resistance to cisplatin, amplification of the ABCC9 gene is an index of acquisition of drug resistance to etoposides, amplification of the ABCD3 gene is an index of acquisition of drug resistance to etoposides, amplification of the ABCD4 gene is an index of acquisition of drug resistance to adriamycin, amplification of the ABCE1 gene is an index of acquisition of drug resistance to camptothecins, amplification of the ABCF2 gene is an index of acquisition of drug resistance to cisplatin, amplification of the BCL2L2 gene is an index of acquisition of drug resistance to camptothecins, cisplatin, etoposides, or cytosine arabinosides, amplification of the BCL2L10 gene is an index of acquisition of drug resistance to camptothecins, cisplatin, or cytosine arabinosides, and amplification of the BCL2L1 gene is an index of acquisition of drug resistance to camptothecins, cisplatin, etoposides, or cytosine arabinosides.
3. The detection method according to claim 1 or 2, wherein detection is carried out by the CGH method, the flow cytometry method, the ELISA method, the DNA

chip method, or the quantitative PCR method.

4. The detection method according to claim 1 or 2, wherein detection is carried out by the CGH method or the DNA chip method.

5. The detection method according to claim 4, wherein a substrate used in the CGH method or the DNA chip method is a DNA fixed substrate wherein the DNA comprises one or more types of genes selected from ABC transporter genes and BCL2 family genes consisting of ABCA3 gene, ABCB6 gene, ABCB8 gene, ABCB10 gene, ABCC4 gene, ABCC9 gene, ABCD3 gene, ABCD4 gene, ABCE1 gene, ABCF2 gene, BCL2L2 gene, BCL2L10 gene, BCL2L1 gene, and BCL2A1 gene.

6. The detection method according to claim 5, wherein said substrate is a DNA fixed substrate which further comprises one or more types of genes selected from ABC transporter genes, BCL2 family genes, and DNA synthesis-associated genes, which consist of ABCB1 gene, ABCC1 gene, ABCB11 gene, BCL2 gene, MCL1 gene, BCLXL gene, DCK1 gene, TOP1 gene, and TOP2A gene.

7. The method of detecting drug resistance-acquired cancer cells according to any one of claims 4 to 6, which comprises: allowing control DNAs and the DNA of a test cancer cell used as a target of detection of acquisition of drug resistance, each of which was labeled with each different fluorescent dye, to simultaneously contact with said DNA-fixed substrate, so as to conduct hybridization; and quantitatively detecting amplification or deletion of a specific region of the test DNA by using the fluorescent dye obtained as a result of the hybridization as an index.

8. The method of detecting drug resistance-acquired cancer cells according to claim 7, wherein DNA fixed on said DNA-fixed substrate, test DNA, and control DNA are genomic DNAs.

9. A DNA-fixed substrate on which DNA comprising one or more types of genes selected from ABC transporter genes and BCL2 family genes consisting of ABCA3 gene, ABCB6 gene, ABCB8 gene, ABCB10 gene, ABCC4 gene, ABCC9

gene, ABCD3 gene, ABCD4 gene, ABCE1 gene, ABCF2 gene, BCL2L2 gene, BCL2L10 gene, BCL2L1 gene, and BCL2A1 gene, is fixed.

10. The DNA-fixed substrate according to claim 8, on which several types of DNAs comprising one or more types of genes selected from ABC transporter genes, BCL2 family genes, and DNA synthesis-associated genes, which consist of ABCB1 gene, ABCC1 gene, ABCB11 gene, BCL2 gene, MCL1 gene, BCLXL gene, DCK1 gene, TOP1 gene, and TOP2A gene, are further fixed.

11. The DNA-fixed substrate according to claim 9 or 10, wherein several types of DNAs that are to be fixed on the substrate are genomic DNAs, cDNAs, or synthetic oligonucleotides.

12. The DNA-fixed substrate according to claim 11, wherein several types of DNAs are genomic DNAs and wherein said genomic DNAs are gene amplified products of BAC DNA, YAC DNA, or PAC DNA.